

Independent claim 1 recites a method for dewatering water-containing coal, comprising the step of "heating the water-containing coal at a temperature of 100°C to 350°C under a pressure not less than a saturated steam pressure at the temperature for the heating, while applying a shearing force of 0.01 MPa to 20 MPa to the water-containing coal, in a sealed vessel." Kamei does not disclose or suggest this feature.

Kamei discloses a system for dewatering a water-containing coal ("the brown coal") by (1) heating the high moisture brown coal in a fluid medium having an elevated temperature and a high pressure, thereby reducing the moisture of the brown coal, (2) compressing the porous structure of the brown coal by mechanical means, while maintaining the temperature and the pressure of the surrounding fluid medium the same as in the final stage of heating, and (3) lowering the pressure of the surrounding fluid medium while maintaining the mechanical compression of the brown coal. See col. 3, lines 1-14 of Kamei. Kamei dewateres the brown coal by pressing it with a mechanical means (i.e., a screw, a stamp, and pistons) and thereby decreasing the pressure of the fluid surrounding the coal. See col. 5, lines 47-50 of Kamei.

In Kamei's screw extruder type compressing-depressurizing unit, the tip of the screw pushes the brown coal, which is already hot and dewatered, through a chamber to a primary tapered mould. See col. 6, lines 7-12 of Kamei. Then, the brown coal is compressed as a pressing/extruding force is exerted from the screw in order for it to move and to reach the second tapered mould. Here, the primary tapered mould and the second tapered mould are smaller in volume than of the chamber. See Fig. 3 of Kamei. Thus, the system in Kamei merely compresses the brown coal to dewater, and the screw only exerts the extruding/pressing force on the brown coal in order it to travel through the compressing chamber.

Similarly, in Kamei's stamping extruder type compressing-depressurizing, the tip of the stamping plunger also exerts the extruding/pressing force to push the coal through a tapered mould. See col. 6, lines 28-34 of Kamei. The mould is composed of multiple depressurizing chambers. See col. 6, lines 35-38 of Kamei. As the brown coal travels towards the end the mould, whose volume progressively decreases, moisture is squeezed by compression (e.g., the water is squeezed by compression of capillaries in the brown coal). See col. 6, lines 37-41 and Fig. 4 of Kamei. Accordingly, Kamei does not destroy the pore structure of the brown coal. Rather, Kamei only compresses the brown coal to dewater and the pore structure is maintained.

Likewise, Kamei's multi-stage plunger-type compressing-depressurizing unit merely compresses already dewatered brown coal by two pistons. See col. 7, lines 48-54 and Fig. 5 of Kamei. As such, the multi-stage plunger-type compressing depressurizing unit only compresses the brown coal. Therefore, the screw extruder type compressing-depressurizing unit, the stamping extruder type compressing-depressurizing unit, and the multi-stage plunger type compressing-depressurizing unit only compress the brown coal and do not shear the brown coal.

By contrast, claim 1 recites a method for dewatering water-containing coal having the step of "applying a shearing force of 0.01 MPa to 20 MPa to the water-containing coal."

Kamei does not disclose or suggest this feature of claim 1.

The Office Action further asserts that Kamei's screw from the screw extruder-type compressing-depressurizing unit inherently provides a compression force as well as a shearing force, based on its design. However, as discussed above, Kamei neither suggests nor discloses "applying a shearing force" nor is this feature inherent based on its design. To further illustrate, when your right and left hand are pressed against each other, a pressure occurs, but not shearing force. However, when you rub your right hand and your left hand

together, the shearing force occurs with some pressure. Kamei's screw from the screw extruder-type compressing-depressurizing unit only compresses and puts pressure on the brown coal, but does not apply a shearing force to the brown coal. As such, Applicant respectfully submits that Kamei does not disclose the application of a shearing force to the brown coal.

Accordingly, for all of the reasons stated above, Applicant respectfully requests withdrawal of the rejection of claim 1 and claims 2-7 and 10-12 depending therefrom, under 35 U.S.C. §102(b).

II. Rejection Under 35 U.S.C. §103

The Office Action rejects claims 8 and 9 under 35 U.S.C. §103(a) over Kamei in view of U.S. Patent No. 4,216,082 to Vershuur. Applicant respectfully traverses this rejection.

Claims 8 and 9 depend from claim 1. As explained above, Kamei does not disclose or suggest the features recited in claim 1, nor does Vershuur supply the subject matter lacking in Kamei. Therefore, claims 8 and 9 are in condition for allowance based on their dependence from claim 1, and for the separately patentable subject matter they recite. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 8 and 9 under 35 U.S.C. §103(a).

The Office Action also rejects claims 13-15 under 35 U.S.C. §103(a) over Kamei in view of U.S. Patent No. 2,824,790 to Gregory. Applicant respectfully traverses this rejection.

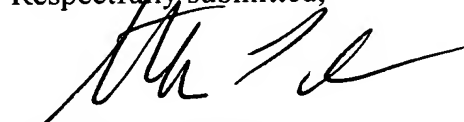
Claims 13-15 depend from claim 1. As explained above, Kamei does not disclose or suggest the features recited in claim 1, nor does Gregory supply the subject matter lacking in Kamei. Therefore, claims 13-15 are in condition for allowance based on their dependence from claim 1, and for the separately patentable subject matter they recite. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 13-15 under 35 U.S.C. §103(a).

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-15 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Petition for Extension of Time

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